Statement of Basis - Narrative
NSR Permit

Company: American Eagle Brick Company
Facility: American Eagle Brick
Permit No(s).: 3532
Tempo/IDEA ID No.: 3584 - PRN20070001
Permit Writer: Elizabeth Bisbey-Kuehn

Fee Tracking (not required for Title V)

Tracking	**NSR tracking entries completed:** [X] Yes [] No
	NSR tracking page attached to front cover of permit folder: [X] Yes [] No
	Paid Invoice Attached: [] Yes [] No
	Balance Due Invoice Attached: [] Yes [] No
	Invoice Comments:

Permit Review	**Date to Enforcement:** 03/03/2009	**Inspector Reviewing:** Ed Horst
	Date Enf. Review Completed: 03/13/2009	**Date of Reply:** 03/16/2009
	Date to Applicant: 02/27/2009	**Date of Reply:**
	Date of Comments from EPA:	**Date to EPA:**
	Date to Supervisor:	

1.0 **Plant Process Description:**

The facility process can be divided into four sub-processes: mining, raw material handling and storage, crushing, grinding, and brick-making. The limiting factor at the facility is the kiln at the end of the process. While the brick-making sub-process, consisting of drying and firing in the kiln, operate continuously, the processes prior to the brick-making (including mining, material storage, crushing) are discontinous and handle and produce higher volumes of material for shorter times, in support of the brick-making end of the process.

The raw brick-making material is mined from a pit located on the property. Raw brick material in this consists of shale mined from the Cristo Rey formation (on the premises) having a naturally high moisture content. The mined material is hauled by trucks to the processing site, where it is stored. The stored material is watered periodically as part of the process, to increase its moisture content.

The material is crushed in the jaw crusher, and screened and further reduced in the cone crusher. A series of conveyors move the material from among processing units.

The crusher material is transported via conveyor into the grinding building where it is ground into a fine powder. This material is then extruded into bricks in the brickmaking

building. The bricks are dried in the dryer, then fired in the kiln, which operates continuously. The dryer scavenges heat from the kiln, it does not have a separate combustion source for heating.

The kiln itself is a high-efficiency system with a relatively low heat input per pound of product. Furthermore, lime naturally present in the brick material acts to reduce PM, chlorine, fluorine, and sulfur emissions from the kiln in the same manner as a limestone scrubber, as verified by test data.

2.0 Description of this Modification:

The air quality permit application for the American Eagle Brick Company (AEB) was submitted as the result of a Settlement Agreement and Stipulated Final Order issued by the New Mexico Environment Department on February 14, 2007.

The NMED issued the Settlement Agreement as the result of extensive negotiations with AEB.

During an inspection of the AEB facility on February 7, 2003, a Bureau inspector observed that the facility had been modified within the previous year by the addition of a vertical impact mill, a double deck screen, and a cone crusher. On December 3, 2003 the Bureau issued a Compliance Order to AEB to settle the alleged violation. The Settlement Agreement requires AEB to apply to the NMED AQB for a construction permit.

3.0 PSD Applicability:

This facility is a minor source for the Prevention of Significant Deterioration Program (PSD) and no PSD review is required for minor sources.

4.0 History:

Shale, silica, limestone, andesite and brick have been crushed and ground for use in brick-making and other uses at this location since before 1897. The present crushing and grinding systems, as modified, have been operating continuously since prior to 1970. This brick manufacturing facility was a grandfathered source prior to this permitting action.

Permit Number	Issue Date	Action Type	Description of Action (Changes)
3532		Regular NSR	Application submitted pursuant to a Settlement Agreement with the NMED

5.0 Public Response/Concerns:

The Department received one letter in support of the issuance of the permit to American Eagle Brick Company.

The Department received multiple letters of interest and support of a public hearing for the air quality application.

In response, the Department sent letters to approximately 215 citizens informing them of American Eagle Brick's permit application, the Department's intent to issue an air quality permit to the American Eagle Brick Company, and a preliminary hearing determination.

The Department's English public notice ran in the *Las Cruces Sun News* on December 01, 2007. The Department's Spanish public notice ran in the *Las Cruces Sun News* on December 07, 2007.

A public hearing is scheduled for April 7, 2009.

The public hearing notice was published in English and Spanish in the *Albuquerque Journal* on February 28, 2009, and in the El Paso Times in English on March 2, 2009 and in the *El Paso Times* in Spanish on March 7, 2009.

The public hearing notice was also sent to all citizens and interested parties.

6.0 **Initial Compliance Testing:**

Unit No.	Compliance Test	Test Dates
2, 3, 4, 5, 6, and 7	EPA Method 9 for PM	These tests shall be conducted within sixty (60) days after the unit(s) achieve the maximum normal production rate. If the maximum normal production rate does not occur within one hundred twenty (120) days of source startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of the source.
22	EPA Method 6C for SO2	

7.0 Startup and Shutdown:

A. Was a Startup, Shutdown, and Malfunction Plan (SSM) submitted: No.

B. Were emissions from startup, shutdown, and scheduled maintenance operations calculated and included in the emission limits? No, the application was submitted prior to the effective date.

8.0 **Compliance and Enforcement Status [Title V only]:** NA

9.0 **Modeling:**

An air dispersion modeling analysis, performed by the applicant and later verified by the Department, demonstrates that operation of the facility neither causes nor significantly contributes to any exceedances of applicable air quality standards.

10.0 **State Regulatory Analysis(NMAC/AQCR):**

20 NMAC	Title	Applies (Y/N)	Comments
2.3	Ambient Air Quality Standards	Y	20.2.3 NMAC is a SIP approved regulation that limits the maximum allowable concentration of Total Suspended Particulates, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. 20.2.3.9 NMAC, LIMITATION OF APPLICABILITY TO 20.2.70 NMAC. The requirements of this part are not applicable requirements under 20.2.70 NMAC, as defined by that part. This section does not limit the applicability of this part to sources required to obtain a permit under 20.2.72 NMAC, nor does it limit which terms and conditions of permits issued pursuant to 20.2.72 NMAC are applicable requirements for permits issued pursuant to 20.2.70 NMAC.
2.7	Excess Emissions	Y	Applies to all facilities' sources
2.33	Gas Burning Equipment - Nitrogen Dioxide	N	This facility has new gas burning equipment (external combustion emission sources, such as gas and oil fired boilers and heaters) having a heat input of greater than 1,000,000 million British Thermal Units per year per unit This facility has existing gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit Note: **"New gas burning equipment"** means gas burning equipment, the construction or modification of which is commenced after February 17, 1972.
2.38	Hydrocarbon Storage Facilities		20.2.38 NMAC **See Regulation using link above then cut and paste applicable sections**
2.61	Smoke and Visible Emissions	Y	Engines XX and heaters XX are Stationary Combustion Equipment.
2.70	Operating Permits	N	PTE **is not** > 100 TPY, Source is major for NOx, CO, VOCs, SO_2, Formaldehyde, and Total HAPs as defined at 20.2.70.200 NMAC.
2.71	Operating Permit Fees	N	Source is subject to 20.2.70 NMAC as cited at 20.2.71.109 NMAC.
2.72	Construction Permits	Y	Specify Section 200.A.1 - 200 A.6 PER > 10 pph or 25 tpy for a criteria pollutant
2.73	NOI & Emissions Inventory Requirements	Y	Applicable to all facilities that require a permit.
2.74	Permits-Prevention of Significant Deterioration	N	Source **is not** one of the 28 listed – PTE < 250 tpy
2.75	Construction Permit Fees	Y	This facility is subject to 20.2.72 NMAC

20 NMAC	Title	Applies (Y/N)	Comments
2.77	New Source Performance		Applies to any stationary source constructing or modifying and which is subject to the requirements of 40 CFR Part 60, as amended through November 30, 2006 and 40 CFR 60 Subpart XXX applies.
2.78	Emissions Standards for HAPs,	N	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 61. This facility emits XX tpy total HAPS.
2.79	Permits – Nonattainment Areas	N	This facility is not located in a non-attainment area. Non-attainment Link
2.82	MACT Standards for Source Categories of HAPs.	N	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63. This facility emits XX tpy total HAPS.
2.87	Greenhouse Gas Emissions Reporting	N	**20.2.87.200 APPLICABILITY:** [Power Plants or Refineries] **A.** The following shall report greenhouse gases under this part, with 2008 as the first greenhouse gas reporting year.

11.0 Federal Regulatory Analysis:

Air Programs Subchapter C (40 CFR 50)	National Primary and Secondary Ambient Air Quality Standards	Applies (Y/N)	Comments
C	Federal Ambient Air Quality Standards	Y	Defined as applicable at 20.2.70.7.E.11, and 20.2.72, Any national ambient air quality standard.

NSPS Subpart (40 CFR 60)	Title	Applies (Y/N)	Comments
A	General Provisions	Y	Applies if any other subpart applies and OOO applies
OOO	New Source Performance Standards for Non-Metallic Mineral Processing Plants	Y	This facility is subject to NSPS OOO, but qualifies for an exemption under 60.670(d)(1). The facility is exempt from the provisions of 60.672, 60.674, and 60.675.

NESHAP Subpart (40 CFR 61)	Title	Applies (Y/N)	Comments
A	General Provisions	N	Applies if any other subpart applies and XX applies

MACT Subpart (40 CFR 63)	Title	Applies (Y/N)	Comments
A	General Provisions	N	Applies if any other subpart applies and XX applies

12.0 **Exempt and/or Insignificant Equipment that do not require monitoring:**

NSR Exempt Equipment

Description	JUSTIFICATION
Unit 23 – Emergency Generator	Exempt under 20.2.72.202.B.5 NMAC

13.0 **New/Modified/Unique Conditions** (Format: Condition#: Explanation):

a. The facility is authorized to operate during the following times:

1. The kiln (Unit 22) is authorized to operate on a continuous basis.

2. The primary jaw crusher (Unit 2) is restricted to operate no more than 10 hours per day, from 7 AM to 5 PM, 7 days per week, and 993 hours per year.

3. The vertical shaft impact mill (Unit 11) is authorized to operate 24 hours per day, 7 days per week, and 2234 hours per year.

4. The backup generator (Unit 23) shall not operate more than 500 hours per year.

Additionally, the jaw crusher may only operate between the daylight hours of sunrise and sunset, as defined by the Astronomical Applications Department of the U.S. Naval Observatory. (Data for one day or a table of sunrise/sunset for an entire year and a given location can be obtained at http://aa.usno.navy.mil/. Alternatively, the sunrise and sunset times can be obtained from The Old Farmers Almanac or from http://www.almanac.com/rise/).

b. Unit 22 shall only combust natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic foot.

c. Truck traffic areas, the pit mine haul road, and all portions of the unpaved brick delivery haul road shall be watered **and** treated with a surface stabilizing agent to control particulate emissions (90% emission control required).

This Specific Condition has been placed in the permit as a result of air dispersion modeling performed by the Department in order to meet state and federal total suspended particulate, PM10, and PM2.5 ambient air quality standards.

d. The number of haul road round trips transporting raw material on the pit mine haul road shall not exceed 60 round trips per day.

e. The number of haul road round trips transporting brick product on the delivery haul road shall not exceed 12 round trips per day.

f. Substitution of equipment is authorized provided the replacement equipment is functionally equivalent and has the same or lower process capacity as the piece of equipment it is replacing in the most recent permit. The replacement equipment shall comply with the opacity requirements in Specific Condition 2.

The Department shall be notified in writing within fifteen (15) days of equipment substitutions.

g. The raw material stored in storage piles and entering the primary crusher (Unit 2) and the processing equipment shall have a minimum material moisture content of 8% (% by weight). In the event that the material moisture content is less than 8%, the permittee shall apply water to the material and retest the material until the 8% material moisture requirement can be demonstrated.

h. The baghouse shall control all particulate matter emissions from the vertical shaft impact mill (Unit 11) and Units 8, 10, 12/13, 14, 15, 16, 17, 18, 19a, 19b, 19c, 19d, and 19e.

i. Units 8, 10, 12/13, 14, 15, 16, 17, 18, 19a, 19b, 19c, 19d, and 19e are grinding process equipment and shall be completely enclosed in the Grinding Building.

j. The permittee shall perform either Option 1 or Option 2 below to demonstrate minor source status for Hydrogen Fluoride (HF):

1. The fluorine content of the clay used in the bricks shall be determined by laboratory analysis. Once every year, a fluorine content test shall be performed on the clay. The permittee shall use the fluorine content data and the equation developed by Storer-Folt, Cooper, and Boeck as published in the Ceramic Bulletin, Volume 71, Number 4, 1992 to calculate the HF emission rate; or

2. The permittee may demonstrate compliance with a minor source status designation by calculating annual HF emissions using the following emission factor from AP-42, section 11.3:

HF Emissions (tons/year) = (0.37 lb of HF/ton fired product)(1 ton HF/2000 lb HF)(tons of product/year)

Emission Limits

(20.2.72.210 NMAC, paragraphs A and B.1)

a. The maximum allowable emission limits for this Facility are listed in Table 2.1 and were relied upon by the Department to determine compliance with applicable regulations and ambient air quality standards.

Table 2.1: Allowable Emissions

Unit No.	[1]NO_x pph	NO_x tpy	CO pph	CO tpy	VOC pph	VOC tpy	SO_2 pph	SO_2 tpy	TSP pph	TSP tpy	PM_{10} pph	PM_{10} tpy	$PM_{2.5}$ pph	$PM_{2.5}$ tpy
21	-	-	-	-	<	1.1	-	-	0.7	2.9	0.5	2.2	0.5	2.2
22	3.0	13.0	10.2	44.7	<	0.9	1.1	5.0	0.6	2.8	0.5	2.1	0.4	2.1

[1] Nitrogen dioxide emissions include all oxides of nitrogen expressed as NO_2

[2] "-" indicates that in accordance with the application, emissions of this pollutant are not expected.

[3] " < " indicates that the emissions are less than 0.5 pph or 0.5 tpy and emission limits are not required for this permit.

b. If during any compliance testing, any crusher, screen, conveyor belt, or conveyor transfer point, exhibits an opacity reading greater than 5% opacity, that emission point shall be equipped with water sprays, a dust collection and control system, a containment system, (i.e. cyclone, scrubber, baghouse, enclosures over transfer points, conveyor drop chutes), or other equally effective control measures to minimize emissions. The control measures, as required above, shall be installed within 30 days of the compliance test and operated as on an "as needed" basis to meet the opacity limitations contained in this permit. Compliance with this condition shall be determined by opacity test observations conducted in accordance with the procedures in 40 CFR Part 60.11 and Reference Method 9 in 40 CFR Part 60 Appendix A.

c. Particulate emissions from non-NSPS affected transfer points, belt conveyors, screens, feed bins, and from stockpiles, located outside of the Grinding Building, shall not exhibit greater than 10% opacity. Particulate emissions from non-NSPS crushers located outside of the Grinding Building shall not exhibit greater than 15% opacity.

d. Stockpiles shall be maintained with standard industry practices and procedures to prevent any visible emission crossing the facility's property boundary, as determined by EPA Method 22.

e. Sites of overburden removal and active pit areas shall be watered, dependent upon existing wind speeds and soil moisture content, as necessary to minimize dust emissions.

f. The Grinding building, and its associated doors, vents, and windows, shall exhibit no visible emissions except for thirty (30) seconds during a six (6) minute period, as determined by EPA Method 22.

This Specific Condition has been placed in the permit as a result of air dispersion modeling performed by the Department in order to meet state and federal total suspended particulate, PM10, and PM2.5 ambient air quality standards.

g. Compliance with the emission limits for the dryer and the kiln (Units 21 and 22) in Table 2.1 shall be demonstrated by firing only natural gas in the kiln (Unit 22).

Monitoring
(20.2.72.210.C NMAC)

a. Once each week, the permittee shall test and calculate the percent moisture content of the raw aggregate material at each material storage pile. The tests shall be conducted using ASTM methods and shall take place in the afternoon.

b. Once each month, the permittee shall perform an EPA Method 22 to determine compliance with Condition 2.d. and 2.f. If visible emissions in excess of those allowed in Condition 2.d. or 2.f. are observed, the permittee shall take corrective action by ceasing operations and applying water to the raw material. An EPA Method 22 shall then be performed and corrective action repeated until no visible emissions are observed.

c. Use of natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic foot constitutes compliance with 20.2.61 NMAC unless opacity exceeds 20% averaged over a 10-minute period. When any visible emissions are observed during steady state operation, opacity shall be measured over a 10-minute period, in accordance with the procedures at 40 CFR 60, Appendix A, Method 9 as required by 20.2.61.114 NMAC.

d. The inlet and exit static pressure (differential pressure) of the baghouse shall be monitored by the use of pressure gauges, which shall be maintained in good operating condition.

e. If the permittee chooses to demonstrate minor source status with Option 1 from Condition 1.o., the permittee shall test the fluorine content of raw material once per calendar year.

Recordkeeping
(20.2.72.210.E NMAC)

a. The permittee shall keep daily records of requirements 1, 2, and 3 and shall keep weekly records of requirement 4, below:

    1. The date, start time, end time, and total hours of any production or mining activity;

    2. The total number of haul road trips for the haul road identified in Condition 1.i. and 1.j.;

    3. The frequency, quantity, and location(s) of the water application(s), or equivalent control measures shall be maintained; and

    4. The date, time of day, location where samples were taken in the material stockpiles, and the supporting documentation and results of the moisture content calculation.

b. The Permittee shall demonstrate compliance with the natural gas limit on total sulfur content by maintaining records of a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying the maximum total sulfur content of the fuel is 5 grains of total sulfur per 100 standard cubic feet (SCF) or less.

c. Each calendar week, the permittee shall calculate the weekly total hours that the crusher (Unit 2), the vertical shaft impact mill (Unit 11), and the standby generator (Unit 23) operate. The permittee shall calculate the weekly rolling 52-week total hours of operation for Units 2, 11, and 23.

d. The Permittee shall record dates of any opacity measurements and the corresponding opacity readings as required by Specific Condition 6.c.

e. The Permittee shall maintain records of the visible emissions observations and/or repairs, and the date and the time of the testing occurring as a result of those observations, as required by Condition 3.

f. The permittee shall maintain records of the name of the operator performing the monitoring and the training verifying opacity monitoring certification, as required by Condition 3 and Condition 6.

g. Differential pressure across the baghouse shall be recorded once each day.

h. If the permittee chooses to demonstrate minor source status with Option 1 from Condition 1.o., the permittee shall record the results of the test conducted per Condition 3.e.

Records required by this permit, unless otherwise noted, shall be retained at the plant site for the most recent two (2) year period and shall be made available to Department personnel upon request.

Reporting

(20.2.72 NMAC, Sections 210 and 212)

a. No additional reports are required for this NSR permit, other than those cited in this permit, required by federal regulations or the Title V permit, unless the Department specifically requests submittal of certain records that are to be retained by the Permittee according to the requirements of General Condition 2.

Compliance Testing

(20.2.72 NMAC, Sections 210.C and 213)

a. Initial compliance tests are required on Unit(s) No. 2, 3, 4, 5, 6, and 7 for particulate matter, and on Unit 22 for SO2, to demonstrate compliance with the limits in Specific Condition 2. Compliance test requirements from previous permits (if any) are still in effect, unless the tests have been satisfactorily

completed. Compliance tests may be re-imposed if it is deemed necessary by the Department to determine whether the source is in compliance with applicable regulations or permit conditions.

b. These tests shall be conducted within sixty (60) days after the unit(s) achieve the maximum normal production rate. If the maximum normal production rate does not occur within one hundred twenty (120) days of source startup, then the tests must be conducted no later than one hundred eighty (180) days after initial startup of the source.

c. For particulate matter tests, the permittee shall perform six (6) minute opacity readings for each crusher, screen and stacker conveyor (material drop to storage pile), located outside of the Grinding Facility, at least once per calendar month to demonstrate compliance with the opacity limitations in this permit. The test shall be done at the normal operational load of the facility. Compliance with this condition shall be determined by opacity test observations conducted in accordance with the procedures in 40 CFR Part 60.11 and Reference Method 9 in 40 CFR Part 60, Appendix A.

d. Additionally, if requested by the Department in writing, the permittee shall perform six (6) minute opacity readings for each transfer conveyor at least once per calendar month to demonstrate compliance with the opacity limitations in this permit. The test shall be done at the normal operational load of the facility. Compliance with this condition shall be determined by opacity test observations conducted in accordance with the procedures in 40 CFR Part 60.11 and Reference Method 9 in 40 CFR Part 60, Appendix A.